

REMARKS/ARGUMENTS

The Examiner is thanked for the thorough examination and search of the subject.

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Claims 163-208 are pending; Claims 1-162 have been canceled. No new matter is believed to have been added.

Response to Claim Rejections under 35 U.S.C. 112

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Reconsiderations of Claims 163-208 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement are requested based on the following remarks.

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The Examiner considers that “the term “polymer” is broader than the disclosed more narrower range of interlevel dielectric layers, disclosed specifically as “polyimide, benzocyclobutene, porous dielectric material and stress buffer material”. There is no support for broadening the “dielectric layer” disclosure to include “polymer”. There is no support for broadening the “dielectric layer” disclosure to include “polymer”. The disclosed “filling layer” is specifically stated to be “epoxy” or “polymer”, however, the filling layer is not the “dielectric” layer and there is no support for multiple polymer layers. There can be multiple “dielectric” layers but not multiple polymer (=“filling”) layers. All claims are considered new matter.” ~
See lines 11-21 on page 2, in the last Office Action mailed Dec. 10, 2008 ~

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Applicants respectfully traverse the Examiner’s opinion because polymer layers are not new matters and can be claimed as broader terms. Polyimide, benzocyclobutene and epoxy are well known of polymers, and therefore the interlevel dielectric layers, such as polyimide or benzocyclobutene, and the filling layer, such as epoxy, can be deemed as polymer layers. The subject matters that “the interlevel

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dielectric layers are polymer layers” and that “the filling layer is a polymer layer” are believed to be supported in the original specification. A broader term or broader concept is believed to be allowed to be recited in claims only if the broader term is supported in the original specification. As a general proposition, broadening
5 modifiers are standard tools in claim drafting in order to avoid reliance on the doctrine of equivalents in infringement actions. ~ *See the third paragraph in M.P.E.P. 2173.05(b)* ~

Therefore, the term of “polymer” is believed to be allowed to be recited in
10 claims even though the term of “polymer” is broader than the terms of “polyimide”, “benzocyclobutene” and “epoxy”. Withdrawal of rejection under 35 U.S.C. 112, first paragraph, to Claims 163-208 is respectfully requested.

Response to Claim Rejections under 35 U.S.C. 103

15 *Reconsiderations of Claims 163-208 rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger et al. (U.S. Pat. No. 6,396,148) in view of Wagner et al. (U.S. Pat. No. 5,196,377) and Wachtler et al. (U.S. Pat. No. 6,707,124) are requested based on the following remarks.*

20 Applicants respectfully assert that the chip package currently claimed in Claim 163 patentably distinguishes over the citations by Eichelberger et al. (U.S. Pat. No. 6,396,148) in view of Wagner et al. (U.S. Pat. No. 5,196,377) and Wachtler et al. (U.S. Pat. No. 6,707,124).

25 The Examiner considers that “applicant’s argument regarding “electroplated copper” is unconvincing of patentability. Again it is emphasized there are no specific copper structural differences claimed to distinguish the claimed copper over the copper of the applied art.” ~ *See lines 16-19, on page 3, in the last Office Action*
30 *mailed Jun. 17, 2008* ~

The Examiner considers that “The new limitations are not patentable as Eichelberger discloses multiple layers of metallizations on polymer dielectrics and directly over dies wherein the metalizations inherently comprise resistance, capacitance and inductance, hence are “passive devices”” and that “The metalizations comprise capacitance, resistance and inductance inherently. There are no specific “passive devices” claimed structurally distinguishing over the metallization “passive devices” of the applied art”. ~ See line 24 of page 2 through line 1 of page 3, and lines 5-8 on page 4, in the last Office Action mailed Dec. 10, 2008 ~

Applicants respectfully traverse the Examiner’s opinion. Even though, in Fig. 2 in U.S. Pat. No. 6,396,148, Eichelberger’s metallization structure 108 and 114 creates resistance, capacitance and inductance, Eichelberger fails to teach, hint or suggest that the resistance, capacitance and inductance can be used for a resistor, capacitor or inductor. The Examiner would not focus too much on whether a metallization structure comprises multiple circuit layers and multiple insulating layers therebetween is disclosed or not, but instead reconsider the functional limitation. A functional limitation should be evaluated and considered, just like any other structural limitation in a claim. ~ See M.P.E.P. 2173.05(g) ~

The Examiner considers that “There is no original language specifically stating the dielectric layers are “polymer”. The generic term “polymer” is clearly much broader or of different scope than the specifically disclosed “dielectric” layers and specifically “PI, BCB, porous dielectric layer, and stress buffer material” for the dielectric layers. “Polymer” is new matter here and does not have original basis”. ~ See lines 12-17 on page 3, in the last Office Action mailed Dec. 10, 2008 ~

Applicants respectfully traverse the Examiner’s opinion because there is an original language specifically stating the dielectric layers are “polymer” and “polymer” is not a new matter and has original basis. In Para. [0027] in the original

specification, Applicants teach that “The material of filling layer 130 can be epoxy, polymer, or the like.” In Para. [0028] in the original specification, Applicants teach that “The material of dielectric layer 142 can be poly-Imide (PI), benzocyclobutene (BCB), porous dielectric material, stress buffer material, or the like.” Polyimide, benzocyclobutene and epoxy are well known of polymers. Therefore, the term of “polymer layer” is believed to be supported in the original specification, but not to be the issue of new matters.

Furthermore, a broader term or broader concept is believed to be allowed to be recited in claims only if the broader term is supported in the original specification. As a general proposition, broadening modifiers are standard tools in claim drafting in order to avoid reliance on the doctrine of equivalents in infringement actions. ~ *See the third paragraph in M.P.E.P. 2173.05(b)* ~

polymer layers are not new matters and can be claimed as broader terms. Polyimide, benzocyclobutene and epoxy are well known of polymers, and therefore the interlevel dielectric layers, such as polyimide or benzocyclobutene, and the filling layer, such as epoxy, can be deemed as polymer layers. The subject matters that “the interlevel dielectric layers are polymer layers” and that “the filling layer is a polymer layer” are believed to be supported in the original specification. A broader term or broader concept is believed to be allowed to be recited in claims only if the broader term is supported in the original specification. As a general proposition, broadening modifiers are standard tools in claim drafting in order to avoid reliance on the doctrine of equivalents in infringement actions. ~ *See the third paragraph in M.P.E.P. 2173.05(b)* ~

Therefore, the term of “polymer” is believed to be allowed to be recited in claims even though the term of “polymer” is broader than the terms of “polyimide”, “benzocyclobutene” and “epoxy”. Withdrawal of rejection under 35 U.S.C. 112, first

paragraph, to Claims 163-208 is respectfully requested.

5 The Examiner considers that “In regard to “electroplated copper” applicant argues limitations not in the claims, specifically “grain size”, “crystal orientation” and “seed layer”, and therefore the arguments are not convincing of patentability. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.” ~ See lines 18-22 on page 3, in the last Office Action mailed Dec. 10, 2008 ~

10 Applicants respectfully traverse the Examiner’s opinion because “electroplated copper” can be expected to impart distinctive structural characteristics to the final product in the grain size using a TEM cross-section or in the crystal orientation using a TEM cross-section or an X-ray diffraction analysis.

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The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., In re Garnero, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding "interbonded by interfusion" to limit structure of the claimed composite and noting that terms such as "welded," "intermixed," "ground in place," "press fitted," and "etched" are capable of construction as structural limitations.) ~ Extracted from MPEP 2113 ~
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Under the rule on MPEP 2113, it is believed that the structures of “electroplated copper” implied by a process step should be considered even though “grain size”, “crystal orientation” or “seed layer” is not recited in Claims.
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For at least the foregoing reasons, withdrawal of rejection under 35 U.S.C. 103(a) to Claims 163-208 is respectfully requested.

Conclusion

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Some or all of the pending claims are believed to be in condition for allowance. Accordingly, allowance of the claims and the application as a whole are respectfully requested.

10 Sincerely yours,

/Winston Hsu/

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20 Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)